RETURN TO SERVICE PROCEDURE TABLE OF CONTENTS
RETURN TO CD-ROM TABLE OF CONTENTS

Dräger medical
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Field Service Procedure

Flowmeter Bezel Assembly Isolation Kit Installation
Anesthesia

Revision -
4/14/04
SP00314

FLOWMETER BEZEL ASSEMBLY ISOLATION KIT PROCEDURE

1 GENERAL INFORMATION

This document contains warning statements.

– **WARNING** statements provide important information which, if ignored, could lead directly to a patient's injury.

WARNING
Any person involved with the setup, operation, or maintenance of the Fabius GS® anesthesia machine must be thoroughly familiar with the instruction manual for this product.

2 INTRODUCTION

The purpose of this Service Procedure is to support the installation of the of the Flowmeter Bezel Assembly Isolation Kit. The Isolation Kit was developed to isolate circuit common from chassis ground.

3 KIT CONTENTS

Inspect the Isolation Kit to verify that it contains the following:

PART NUMBER	DESCRIPTION
4118626	Insulator, Sensor Housing
4118655	Washer, Shoulder
HW50025	Nut, Hex
SP00314	Service Procedure

4 PRELIMINARY CURCUIT ISOLATION TESTING

1. Set the machine's Main Power Switch to the OFF position.
2. With a multimeter set to it's highest resistance range, check for continuity between the serial port cable retaining nut on processor and the O2 sensor connector pin shown in the illustration.

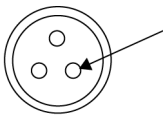

Fig. 1 O2 Connector Pin

3. If no continuity exists between these points, the Flowmeter Bezel Assembly Isolation Kit does NOT require installation. If there is continuity between these two points, the Isolation Kit requires installation. Proceed to Section 5.

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5 MACHINE DISASSEMBLY

5.1 Fabius Tiro Machines

NOTE:
If the Fabius Tiro Core Unit is a trolley mounted unit, skip to step 5. If the Fabius Tiro Core Unit is a wall mounted unit, proceed with the following steps.

1. Remove the Vaporizer (Refer to Section 6, Vaporizers, in the Replacement Procedures Section of the Fabius Tiro Service Manual).
2. Make the necessary provisions to all monitoring devices, breathing system, and accessories on the Core Unit to ensure the unit can pivot up to 180º.
3. Remove the unit pivot knob and washer located under the wall mount bracket, then using an allen wrench, remove the service access screw. Refer to Fig. 2.
4. Remove the cylinder wrench from the holder, then carefully swivel the core unit to gain access to the rear of the unit.

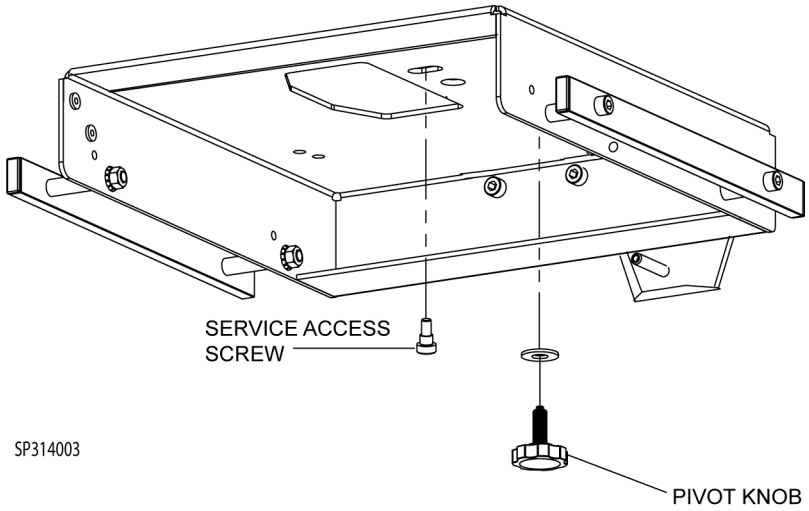

Fig. 2 Wall Mount Service Access

5. Disconnect all pipeline hoses, set the System Power switch to ON.
6. Close all cylinder valves except the O2 valve.
7. Set the oxygen flow to 5 l/min.
8. Open the other gas flow control valves to deplete the pressure from the system.
9. Close the O2 cylinder valve and close the flow control valves. Press the O2 Flush valve to deplete oxygen pressure from the system.

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10. Set the System Power switch to “OFF” and disconnect AC power from the machine.
11. Detach the cylinder supply from the yoke.
12. Disconnect the pipeline and cylinder supplies, and deplete all pressures.
13. Remove the two screws that secure the Service Access Panel at the rear of the Core Unit. Refer to Fig. 3
14. Loosen the two captive screws inside the access panel securing the flow meter bezel assembly.
15. At the front of the machine, carefully pull the assembly forward about 2.5 inches. Disconnect the ribbon cable and the O2 alarm switch wire harness from the fresh gas display PCB, and disconnect each fresh gas flow sensor cable. Continue to pull the assembly forward until free from the machine.
16. Place the Flowmeter Bezel Assembly in a safe, clean location with room to service the assembly.
17. Proceed to Section 6, Isolation Kit Installation.

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Flowmeter Bezel Assembly Isolation Kit Installation — Service Procedure

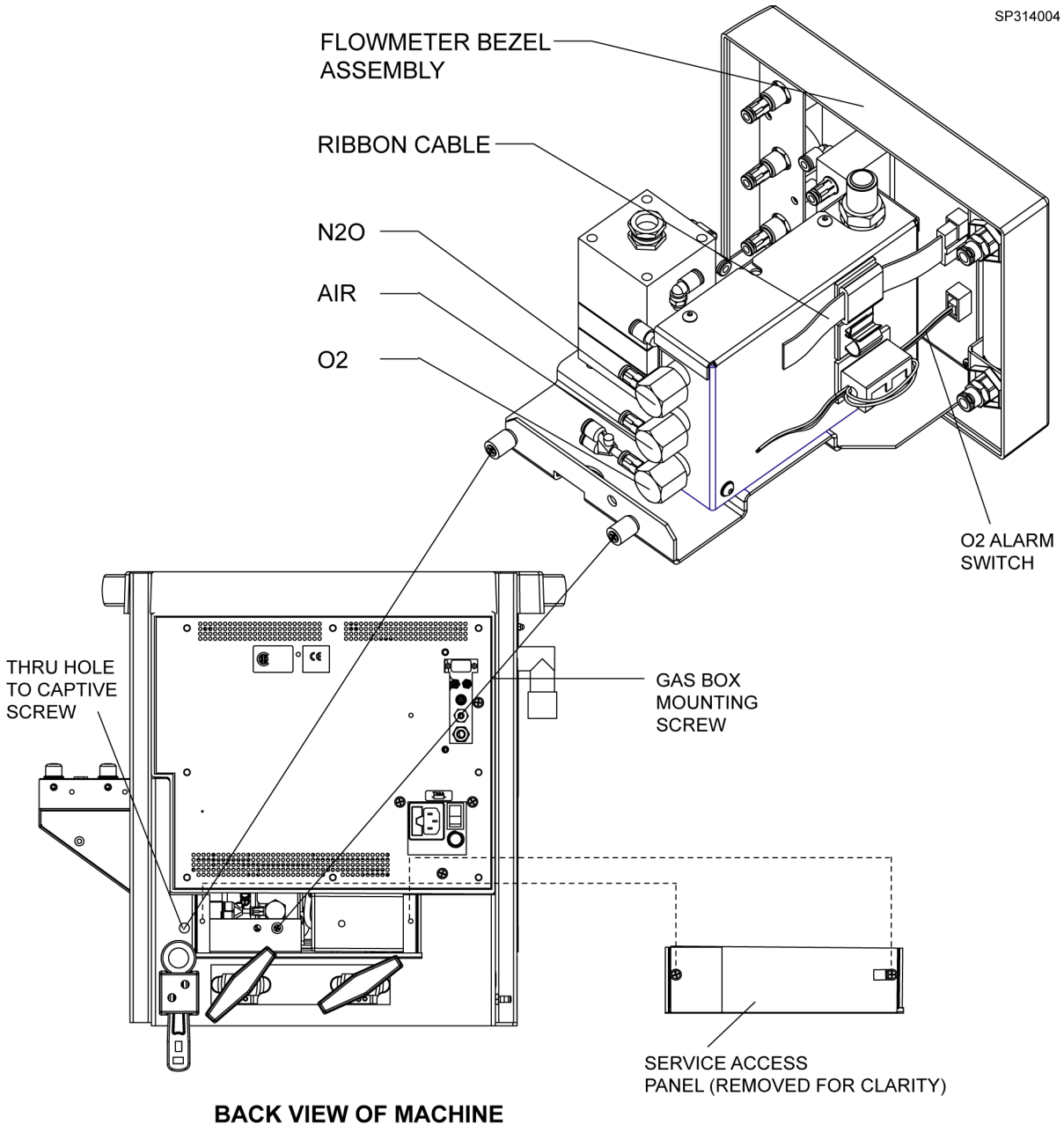

Fig. 3 Flowmeter Bezel Assembly - Fabius Tiro

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5.2 Fabius GS Machines

1. Set the main power switch to OFF and disconnect AC power from the machine.
2. Disconnect the pipeline and cylinder supplies, and deplete all pressures.
3. Remove the two screws at the back of the machine securing the flow meter bezel assembly. Refer to Fig. 4.
4. At the front of the machine, carefully pull the assembly forward about 2.5 inches. Disconnect the ribbon cable and the O2 alarm switch wire harness from the fresh gas display PCB, and disconnect each fresh gas flow sensor cable. Continue to pull the assembly forward until free from the machine.
5. Place the Flowmeter Bezel Assembly in a safe, clean location with room to service the assembly.
6. Proceed to Section 6 - Isolation Kit Installation.

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Flowmeter Bezel Assembly Isolation Kit Installation — Service Procedure

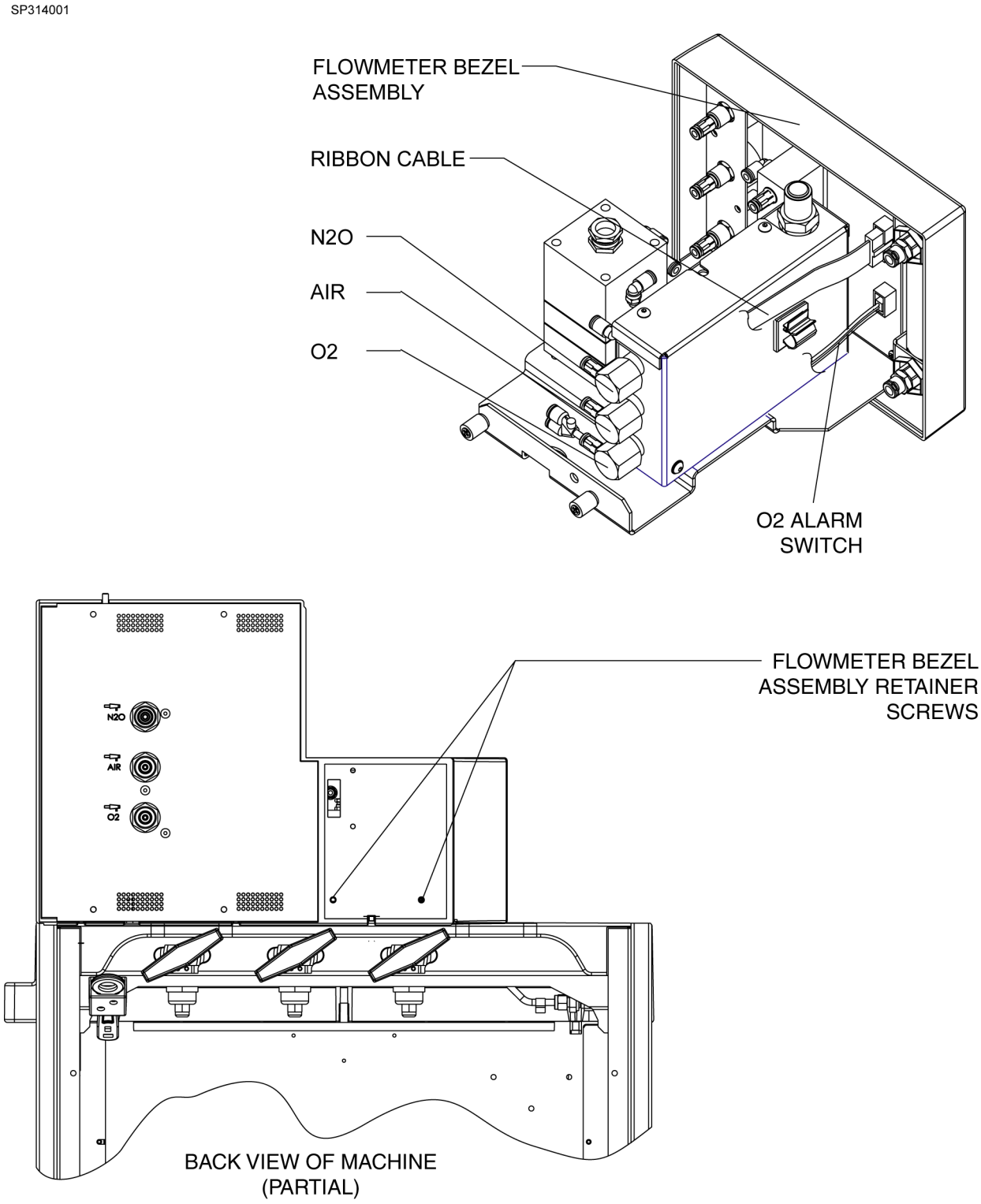

Fig. 4 Flowmeter Bezel Assembly, Fabius GS

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6 ISOLATION KIT INSTALLATION

1. Disassemble the Flow Sensor Assembly from the Flowmeter Bezel Assembly Mounting Plate by removing the two washers and two nuts located on the underside of the mounting plate. Discard the existing washers and nuts. Refer to Fig. 5.
2. Disconnect and document (for reassembly) any hoses necessary to ensure clear access to the mounting holes on the Flowmeter Bezel Assembly Mounting Plate.
3. Cover all other pneumatic components of the Flowmeter Bezel Assembly to prevent entry of debris from the subsequent drilling process.
4. Using a 5/16 drill bit, drill the two Flow Sensor Assembly mounting holes to 5/16 Dia. Refer to Fig. 5 for exact location.
5. Remove all burrs, sharp edges and debris.
6. Place the insulator provided in the kit between the Flowmeter Bezel Assembly Mounting Plate and the Flow Sensor Assembly. Position the isolator so that the hole pattern is aligned with the mounting screws located on the bottom of the Flow Sensor Assembly. Ensure that the upper portion of the isolator is located on the outside edge of the Flow Sensor Assembly. Refer to Fig. 5 for correct installation positioning.
7. Place the mounting screws of the Flow Meter Assembly through the mounting holes on the Flowmeter Bezel Assembly Mounting Plate as it was prior to removal.

NOTE:
Ensure that the shoulder washers are installed with the tapered edge in the upward position. Refer to Fig. 5 for an illustration showing proper orientation.

8. Install the supplied shoulder washers and hex nuts on the mounting screws through bottom of the Flowmeter Bezel Assembly Mounting Plate as shown in Fig. 5.
9. Reconnect, if necessary, an hoses that were removed during step 2.

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Flowmeter Bezel Assembly Isolation Kit Installation — Service Procedure

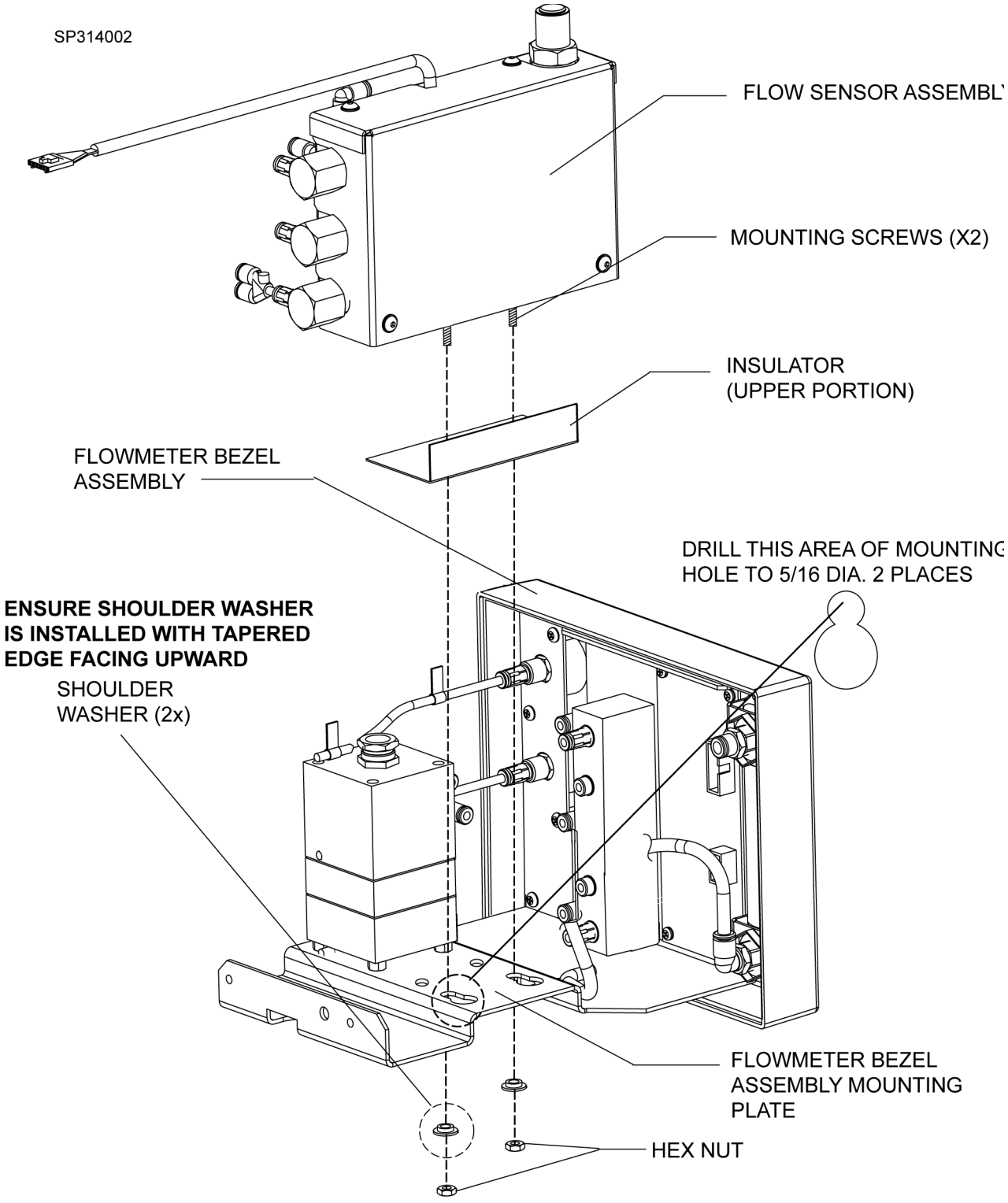

Fig. 5 Isolator Installation

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7 MACHINE REASSEMBLY

7.1 Fabius Tiro Machines

1. Push Flowmeter Bezel Assembly back into it's compartment and reattach the Ribbon Cable, O2 Alarm Switch Wire Harness, and Fresh Gas Flow Sensor Cable to the fresh gas display PCB. Continue to install the assembly into it's compartment until it is fully seated.
2. Tighten two captive screws that secure the Flowmeter Bezel Assembly.
3. Reinstall the two screws and Service Access Panel located at the back of the machine.

NOTE:
If working on a Fabius Tiro Trolley Unit, skip to step 6. If servicing a Fabius Tiro wall Mounted unit, proceed with the following steps.

4. Pivot core module back into its original position and reinstall the service access screw, pivot knob, and washer.
5. Reinstall all monitoring devices, breathing system vaporizer or accessories to the core unit that were previously removed, then reinstall the cylinder wrench in its holder.
6. Reconnect the pipeline and cylinder supplies.
7. Reattach the cylinder supply to the yoke.
8. Reinstall all monitoring devices, breathing system vaporizer or accessories to the core unit that were previously removed.
9. Reconnect AC Power to the machine.

7.2 Fabius GS Machines

1. Push Flowmeter Bezel Assembly into it's compartment and reattach the Ribbon Cable, O2 Alarm Switch Wire Harness, and Fresh Gas Flow Sensor Cable to the fresh gas display PCB. Continue to install the assembly into it's compartment until it is fully seated.
2. Reinstall the two screws previously removed that secure the Flowmeter Bezel Assembly at the rear of the machine. Refer to Fig. 4.
3. Reinstall the Service Access Panel located at the back of the machine.
4. Reconnect the pipeline and cylinder supplies.
5. Reattach the cylinder supply to the yoke.
6. Reconnect AC Power to the machine.

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8 PERFORMANCE TESTING

8.1 Circuit Isolation Testing

1. With a multimeter set to it's highest resistance range, check for continuity between the serial port cable retaining nut on processor and the O2 sensor connector pin shown in the illustration. No continuity should exist between these two points.

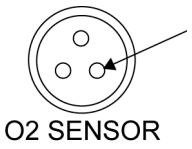

Fig. 6 O2 Connector Pin

NOTE:
If continuity DOES exist between these two points, a problem occurred with the isolation kit installation.
Verify all proceeding steps in Section 6 ISOLATION KIT INSTALLATION were performed correctly. Make any necessary adjustments.
Repeat the performance testing until the machine passes the continuity test.

2. Perform the PMS procedure located in the Fabius GS or Fabius Tiro Service Manual.

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